CLAIMS

1 A method for the diagnosis of a single nucleotide polymorphism in a α_4 integrin subunit in a human, which method comprises determining the sequence of nucleic acid of the human at one or more of the following positions:

positions 740, 2273, 2446, 3311 and 3506 in the coding region of α_4 integrin subunit gene as defined by the positions in EMBL ACCESSION NO. L12002;

position 967 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. L26509; and

positions 184, 238, 331, 436, 676, 1010, or 1115 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. M26841;

and determining the status of the human by reference to polymorphism in the α_4 integrin subunit gene.

2 A method for diagnosis according to claim 1 in which the single nucleotide polymorphisms are further defined as:

the single nucleotide polymorphism at position 740 is presence of C and/or T;

the single nucleotide polymorphism at position 2273 is presence of A and/or G;

the single nucleotide polymorphism at position 2446 is presence of C and/or T;

the single nucleotide polymorphism at position 3311 is presence of T and/or C;

the single nucleotide polymorphism at position 3506 is presence of C and/or T;

the single nucleotide polymorphism at position 967 is presence of G and/or A;

the single nucleotide polymorphism at position 184 is presence of A and/or G;

the single nucleotide polymorphism at position 238 is presence of C and/or T;

the single nucleotide polymorphism at position 331 is presence of C and/or T;

the single nucleotide polymorphism at position 436 is presence of C and/or T;

the single nucleotide polymorphism at position 676 is presence of C and/or T;

the single nucleotide polymorphism at position 1010 is presence of C and/or A; and

the single nucleotide polymorphism at position 1115 is presence of C and/or T.

3 A method for diagnosis according to claim 1 in which the method comprises determining the sequence of nucleic acid of the human at position 2446 for presence of C and/or T.

4 A method for diagnosis according to any preceding claim in which the sequence is determined by a method selected from amplification refractory mutation system, minisequencing and restriction fragment length polymorphism.

5 A nucleic acid comprising any one of the following polymorphisms:

the nucleic acid of EMBL ACCESSION No. L12002 with T at position 740 as defined by the position in EMBL ACCESSION No. L12002;

the nucleic acid of EMBL ACCESSION No. L12002 with G at position 2273 as defined by the position in EMBL ACCESSION No. L12002;

the nucleic acid of EMBL ACCESSION No. L12002 with T at position 2446 as defined by the position in EMBL ACCESSION No. L12002;

the nucleic acid of EMBL ACCESSION No. L12002 with C at position 3311 as defined by the position in EMBL ACCESSION No. L12002;

the nucleic acid of EMBL ACCESSION No. L12002 with T at position 3506 as defined by the position in EMBL ACCESSION No. L12002;

the nucleic acid of EMBL ACCESSION No. L26059 with A at position 967 as defined by the position in EMBL ACCESSION No. L26059;

the nucleic acid of EMBL ACCESSION No. M26841 with G at position 184 as defined by the position in EMBL ACCESSION No. M26841;

the nucleic acid of EMBL ACCESSION No. M26841 with T at position 238 as defined by the position in EMBL ACCESSION No. M26841;

the nucleic acid of EMBL ACCESSION No. M26841 with T at position 331 as defined by the position in EMBL ACCESSION No. M26841;

the nucleic acid of EMBL ACCESSION No. M26841 with T at position 436 as defined by the position in EMBL ACCESSION No. M26841;

the nucleic acid of EMBL ACCESSION No. M26841 with T at position 676 as defined by the position in EMBL ACCESSION No. M26841;

the nucleic acid of EMBL ACCESSION No. M26841 with A at position 1010 as defined by the position in EMBL ACCESSION No. M26841;

the nucleic acid of EMBL ACCESSION No. M26841 with T at position 1115 as defined by the position in EMBL ACCESSION No. M26841;

or a complementary strand thereof or an antisense sequence for a coding region or a fragment thereof of at least 20 bases comprising at least one polymorphism.

6 A computer readable medium comprising at least one nucleic acid sequence as defined in claim 5 stored on the medium.

7 An allele specific primer capable of detecting a α_4 integrin subunit gene polymorphism at one or more of positions:

positions 740, 2273, 2446, 3311 and 3506 in the coding region of α_4 integrin subunit gene as defined by the positions in EMBL ACCESSION NO. L12002;

position 967 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. L26509; and

positions 184, 238, 331, 436, 676, 1010, or 1115 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. M26841.

8 An allele-specific oligonucleotide probe capable of detecting a α_4 integrin subunit gene polymorphism at one or more of positions:

positions 740, 2273, 2446, 3311 and 3506 in the coding region of α_4 integrin subunit gene as defined by the positions in EMBL ACCESSION NO. L12002;

position 967 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. L26509; and

positions 184, 238, 331, 436, 676, 1010, or 1115 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. M26841.

9 An allelic variant of the human integrin α_4 polypeptide having a methionine at position 679 or a fragment thereof comprising at least 10 amino acids provided that the fragment comprises the allelic variant at position 679.

10 Use of a α_4 integrin subunit ligand antagonist drug in preparation of a medicament for treating a α_4 integrin subunit ligand mediated disease in a human diagnosed as having a single nucleotide polymorphism at one or more of positions:

positions 740, 2273, 2446, 3311 and 3506 in the coding region of α_4 integrin subunit gene as defined by the positions in EMBL ACCESSION NO. L12002;

position 967 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. L26509; and

positions 184, 238, 331, 436, 676, 1010, or 1115 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. M26841.

11 Use of a nucleic acid sequence comprising at least one of the following polymorphisms in the promoter:

position 967 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. L26509; and

positions 184, 238, 331, 436, 676, 1010, or 1115 in the promoter region of α_4 integrin subunit gene as defined by the position in EMBL ACCESSION NO. M26841;

to identify compounds that modify expression of the human α_4 integrin subunit gene.